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**FARM CREDIT, FARMLAND, FARM INFRASTRUCTURE AND
AGRICULTURAL OUTPUT IN KANO STATE, NIGERIA: THE
MODERATING EFFECT OF *MURABAHAH* FINANCE**

AHMED IBRAHIM MOHAMMED



**DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
JULY, 2017**

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MODERATING EFFECT OF *MURABAHAH* FINANCE**



UUM
By
AHMED IBRAHIM MOHAMMED

Universiti Utara Malaysia

**Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree of Doctor of Philosophy**



Pusat Pengajian Perniagaan Islam
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ABSTRAK

Tujuan kajian ini adalah untuk menyelidik hubungan antara kredit ladang, tanah ladang, infrastruktur ladang dan pengeluaran pertanian di negeri Kano, Nigeria dengan kesan pembiayaan Murabahah. Sorotan kajian dalam bidang pertanian dan lain-lain bidang yang berkaitan dilakukan secara meluas untuk lebih memahami keperluan masa lalu, masa kini dan masa hadapan dalam bidang pengeluaran hasil pertanian. Walaupun hubungan tersebut telah menjana kepentingan ilmiah yang agak besar, namun hanya beberapa kajian dijalankan berkaitan mode pembiayaan pertanian berasaskan Syariah terhadap pengeluaran pertanian di Nigeria. Pertanian penting bagi pertumbuhan ekonomi di Nigeria dan merupakan sumber utama makanan, pekerjaan dan pembasmian kemiskinan di Nigeria. Berdasarkan pengamatan teori yang dikemukakan, satu model telah dicadangkan untuk meneliti hubungan ini. Reka bentuk tinjauan keratan rentas digunakan dalam kajian ini melibatkan pekebun kecil di Kano. Kajian ini telah menggunakan teknik persampelan secara sistematik dalam pengumpulan data dan seramai 764 responden yang terdiri daripada petani dipilih secara rawak. Algoritma Kuasa Dua Terkecil Separa (PLS) dan teknik butstrap telah digunakan untuk menguji hipotesis kajian. Dapatan kajian menunjukkan bahawa kredit ladang dan infrastruktur ladang mempunyai hubungan langsung yang positif secara signifikan dengan output pertanian, manakala tanah ladang pula bukan faktor peramal bagi output pertanian di Kano, Nigeria. Hasil regresi hierarki (ujian pengantaraan) membuktikan bahawa pembiayaan Murabahah mengantarakan hubungan antara kredit ladang, tanah ladang, infrastruktur ladang dan pengeluaran pertanian. Walaubagaimanapun, pembiayaan Murabahah tidak mengantara hubungan antara infrastruktur ladang dan hasil pertanian. Kesimpulannya, hasil kajian ini membuktikan pembiayaan Murabahah mampu memberikan impak yang penting khususnya terhadap pembuat dasar dan organisasi bukan kerajaan (NGO) juga seharusnya mengalakkan pekebun kecil untuk memperbaiki tahap aliran kewangan dan keuntungan. Hal ini akan menggalakkan institusi kewangan Islam menyediakan bantuan perkhidmatan kewangan kepada mereka.

Kata kunci: kredit ladang, tanah ladang, infrastruktur ladang, kewangan murabahah

ABSTRACT

The purpose of this study is to investigate the farm credit, farmland, farm infrastructure and agricultural output in Kano State, Nigeria with the effect of *Murabahah* finance. Literature in agriculture and other related fields was extensively reviewed for better understanding of past, present and future needs in the area of agricultural production. Although their relationships have generated considerable scholarly interest, few studies have actually been conducted in relation to Shariah mode of financing agricultural input and output in Nigeria. Agriculture is essential to the economic growth and it is a major source of food security, employment and poverty reduction in Nigeria. Based on a theoretical consideration, a model was proposed to examine these relationships. A cross-sectional survey design was adopted and the unit of analysis was the registered small scale farmers in Kano state. The study employed systematic sampling technique in data collection, with a sample size of 764 farmers. Partial Least Squares (PLS) algorithm and bootstrap techniques were used to test the study's hypotheses. This study found that farm credit, farmland and farm infrastructure have a significant positive relationship with agricultural output in Kano State, Nigeria. The result of hierarchical regression (moderation test) established that *Murabahah* finance was found to moderate farm credit and farmland. However, *Murabahah* finance does not moderate the relationship between farm infrastructure and agricultural output. Finally, the results of this study reveal that *Murabahah* finance is essential on farm input and output which implies that policy makers and non-governmental organizations should encourage small scale farmers to improve their cash flows and profit. These may encourage Islamic financial institutions to provide them with the financial services.

Keywords: farm credit, farmland, farm infrastructure, *murabahah* finance

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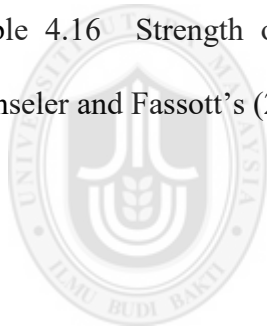
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Glossary of Terms

| | |
|------------|------------------------------------|
| Ijara | Lease |
| Istisna | Commissioned or Order Production |
| Mu'ajjal | Sale by deferring Price |
| Mudarabah | Mark-Up or Cost Plus |
| Mudarib | Manager or Entrepreneur |
| Murabahah | Mark-Up or Cost Plus |
| Musharakah | Equity Partnership |
| Qardhassan | Benevolent Loan |
| Qur'an | Holy Book of Allah |
| Rabaha | Sells an Item for a Certain Profit |
| Rabbul mal | Investor |
| Riba | Interest Rate |
| Sadaqat | Deeds of Charity |
| Shariah | Islamic Law |
| Sihah | Higher Price than its Original |

List of Abbreviations

| | |
|-----------------|--|
| SDGs | Sustainable Development Goals |
| ACGF | Agriculture credit Guarantee Fund |
| AMOS | Analysis of Moment Structure |
| AOP | Agricultural output |
| AVE | Average Variance Extracted |
| CAADP | Comprehensive African Agricultural Development Programme |
| CBN | Central Bank of Nigeria |
| CMH | Commodity Murabahah House |
| CPO | Crude Palm Oil |
| D2 | Mahalanobis Distance |
| EU | European Union |
| FAOSTATS | Food and Agricultural Organization Statistics |
| FOA | Food and Agricultural Organization |
| GAFSP | Global Agriculture and food Security Programme |
| GDP | Gross Domestic Product |
| GIS | Geographic Information System |
| HND | Higher National Diploma |
| IBI | Islamic Banking Institutions |
| IDB | Islamic Development Bank |
| IFAD | International Fund for Agricultural Development |
| IFC | International Finance Cooperation |
| ITFC | International Trade Finance Cooperation |
| KM ² | Kilometer Square |

| | |
|---------|--|
| LC | Letter of Credit |
| MF | Murabahah Finance |
| NA | Not Available |
| NACRDB | Nigerian Agricultural Cooperation and Rural Development Bank |
| NBS | National Bureau of Statistics |
| ND | National Diploma |
| NPC | National Population Commission |
| OLS | Ordinary Least Square |
| PGD | Post Graduate |
| PLS-SEM | Partial Least Square of Structural Equation Modeling |
| NGOs | Non Government Organizations |
| SACCOS | Savings and Credit Cooperatives |
| SPSS | Software Package of Social Science |
| UN | United Nations |
| USD | United State Dollars |
| VAR | Vector Auto Regressive |
| VIF | Variance Inflated Factors |
| WOFAN | Women Farmers Advance Network |

CHAPTER ONE

INTRODUCTION

1.1 Background and Motivation of the Study

Agriculture is the pillar of the global economy through the food security and supply of raw materials to the industries. Agriculture is also a business management of food supply, animal rearing, fisheries, poultry and forest reservations for sustainable living. It can be seen as an act of soil cultivation for the growing of plant and animal management for the purpose of poverty reduction and economic growth. It equally serves as a solution to the global food constraints and means for accomplishing the target of Sustainable Development Goals (SDGs) of the United Nation towards food supply and poverty eradication. Similarly, it is a major source of income and full time employment to the majority of developing countries (Food and Agriculture Organization (FAO), 2013 & 2004; Chisasa, 2014a; Muhammad, Zaheer & Khan, 2014; Ogunbado & Ahmed, 2015; Dobermann, 2016; Bashir & Mohammed, 2017).

To add, developing economy solidly depends on agriculture, as such, three of every four Africans, which constituted 70 percent of the continent population are living in rural areas with the agricultural productivity (Sakumbade, 2009). It equally remained a vehicle for poverty reduction as well as a channel for speedy and sustainable living standard and economic growth of most African countries. Likewise, the economic growth of the most populous country of Africa called Nigeria is almost dependent on agricultural production (FAO, 2008; Ugwa & Kanu, 2012; Oludiran, Akinleye & Ighodaro, 2012; Ogunbado & Ahmed, 2015; Collins, 2015). Additionally, Oguoma, Ben-chendo and Henri-Ukoha (2010) argued that Nigeria was among the highest exporters of agricultural output in Africa that leads to the growth of the country's

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APPENDIX A

RESEARCH QUESTIONNAIRE



SURVEY QUESTIONNAIRE

Research Title: Relationship between farm credit, farmland, farm infrastructure and agricultural output in Kano State, Nigeria: The moderating effect of *Murabahah* finance.

Objective: To investigate the moderating effect on the relationship between farm credit, farmland, farm infrastructure and agricultural output in Kano State, Nigeria.

Target: Individual farmers

Dear Respondent

I am a PhD (Islamic Economics) research student in the above university, currently conducting a survey on the above titled research. The following are the self-explanatory questions that will not take much of your time to answer. Your kind and objective response would be appreciated as it will significantly contribute towards the achieving of the above mentioned objective of the study. Please note that your response will be treated strictly confidential, therefore do not put down your name or your company's name on the questionnaire.

Please do not hesitate to contact the researcher for any enquiry about this research.

Thank you.

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Part A

Instruction:

The following questions will help us understand your behaviour at work. You are not being subjected to tests. There is no right or wrong answers to any question. We believe that the success of this survey is highly dependent on your answers to all questions. Please indicate as honestly and as objectively the extent to which you have engaged in the following behaviour in your university. Use the scales provided below to indicate your level of agreement or disagreement with each Statement. Please **TICK ONE BOX ONLY** for each question. [√]

| | | | | | | | | | |
|--------------------------|----------|-----------------|----------|------------------|----------|--------------|----------|-----------------------|----------|
| Strongly disagree | 1 | Disagree | 2 | Undecided | 3 | Agree | 4 | Strongly agree | 5 |
|--------------------------|----------|-----------------|----------|------------------|----------|--------------|----------|-----------------------|----------|

Section 1

The following statements describe your agricultural output. Please, indicate the extent to which you agree or disagree with the statement on agricultural output.

| Strongly Disagree, | | Disagree, | Undecided, | Agree, | Strongly Agree | | |
|--------------------|--|-----------|------------|--------|----------------|---|--|
| 1 | 2 | 3 | 4 | 5 | | | |
| AOP1 | I produce my agricultural output in less than 2 hectares of land | 1 | 2 | 3 | 4 | 5 | |
| AOP2 | I produce my agricultural output in 3-8 hectares of land | 1 | 2 | 3 | 4 | 5 | |
| AOP3 | I produce my agricultural output in 9-11 hectares of land | 1 | 2 | 3 | 4 | 5 | |
| AOP4 | I produce my agricultural output in 12 and above hectares | 1 | 2 | 3 | 4 | 5 | |
| AOP5 | I used to spend less than 2 hours per hectare in a day | 1 | 2 | 3 | 4 | 5 | |
| AOP6 | I used to spend 3 and above hours per hectare in a day | 1 | 2 | 3 | 4 | 5 | |
| AOP7 | I produced less than 50,000 gross of agricultural output in the last season. | 1 | 2 | 3 | 4 | 5 | |
| AOP8 | I produced 50,001-70,000 gross of agricultural output in the last season. | 1 | 2 | 3 | 4 | 5 | |

| | | | | | | |
|-------|--|---|---|---|---|---|
| AOP9 | I produced 70,001-80,000 gross of agricultural output in the last season. | 1 | 2 | 3 | 4 | 5 |
| AOP10 | I produced 80,001 and above gross of agricultural output in the last season. | 1 | 2 | 3 | 4 | 5 |

Section 2

The following statements describe your farm credit. Please indicate the extent to which you agree or disagree with the statement on farm credit.

| Strongly Disagree, | | Disagree, | Neutral, | Agree, | Strongly Agree | |
|--------------------|---|-----------|----------|--------|----------------|---|
| 1 | | 2 | 3 | 4 | 5 | |
| FC1 | The bank gives loans to finance farming activities. | 1 | 2 | 3 | 4 | 5 |
| FC2 | The interest rate charged on loans restricts farmers from borrowing. | 1 | 2 | 3 | 4 | 5 |
| FC3 | The interest rate charged by the banks is always favourable to farmers. | 1 | 2 | 3 | 4 | 5 |
| FC4 | Farmers are able to take loans at any rate. | 1 | 2 | 3 | 4 | 5 |
| FC5 | The banks always offer farmers better interest. | 1 | 2 | 3 | 4 | 5 |
| FC6 | The interest rate discourages farmers from applying for loans | 1 | 2 | 3 | 4 | 5 |
| FC7 | The loan repayment period that the bank gives enables farmers to accumulate assets. | 1 | 2 | 3 | 4 | 5 |
| FC8 | The loan repayment period enables borrowers to pay all their pending loans in time. | 1 | 2 | 3 | 4 | 5 |
| FC9 | The loan repayment period given by the bank always favours farming activities. | 1 | 2 | 3 | 4 | 5 |
| FC10 | Farmers have a reliable source of income that enables them to pay back their loans in time. | 1 | 2 | 3 | 4 | 5 |

Section 3

The following statements describe your farmland. Please indicate the extent to which you agree or disagree with the statement on farmland.

| Strongly Disagree, | | Disagree, | Neutral, | Agree, | Strongly Agree | |
|--------------------|---|-----------|----------|--------|----------------|---|
| 1 | | 2 | 3 | 4 | 5 | |
| FL1 | Due to the gradual building of farmland to non agricultural activities of family members this leads to the shortage of farmland. | 1 | 2 | 3 | 4 | 5 |
| FL2 | Lack of support for small scale farmers causes low motive to work in to the agricultural sector that leads to the sales of farmland. | 1 | 2 | 3 | 4 | 5 |
| FL3 | Population increases shift town physical space to farmland. | 1 | 2 | 3 | 4 | 5 |
| FL4 | Poor fertility of farmland caused by pollution leads to the inability to support agricultural land. | 1 | 2 | 3 | 4 | 5 |
| FL5 | Infrastructure development such as the construction of air port, stadium also disrupted the farmland. | 1 | 2 | 3 | 4 | 5 |
| FL6 | Inappropriate allocation of farmland by the government officials to non agricultural projects such as hotel, factory etc affected the farmland. | 1 | 2 | 3 | 4 | 5 |

Section 4

The following statements describe your infrastructure. Please indicate the extent to which you agree or disagree with the statement on farm infrastructure.

| Strongly Disagree, | | Disagree, | Neutral, | Agree, | strongly Agree | |
|--------------------|---|-----------|----------|--------|----------------|---|
| 1 | | 2 | 3 | 4 | 5 | |
| F/INF1 | Using inappropriate transportation method of infrastructure. | 1 | 2 | 3 | 4 | 5 |
| F/INF2 | Distance between harvesting and storage facilities is a constraint. | 1 | 2 | 3 | 4 | 5 |
| F/INF3 | The inappropriateness of storage house and fridge facilities. | 1 | 2 | 3 | 4 | 5 |

| | | | | | | |
|--------|--|---|---|---|---|---|
| F/INF4 | Low information about production and marketing of farm credit. | 1 | 2 | 3 | 4 | 5 |
| F/INF5 | Insufficient skills and healthy labours is a constraint. | 1 | 2 | 3 | 4 | 5 |
| F/INF6 | Insufficient extension workers limit the output. | 1 | 2 | 3 | 4 | 5 |
| F/INF7 | Inadequate technology declines the output | 1 | 2 | 3 | 4 | 5 |
| F/INF8 | Poor road and distance from farm to market limit the output. | 1 | 2 | 3 | 4 | 5 |

Section 5

The following statements describe your infrastructure. Please indicate the extent to which you agree or disagree with the statement on *Murabahah* finance.

| Strongly disagree, | | Disagree, | | Neutral, | | Agree, | | Strongly Agree | |
|--------------------|---|-----------|---|----------|---|--------|--|----------------|--|
| 1 | | 2 | | 3 | | 4 | | 5 | |
| MF1 | Engaging in <i>Murabahah</i> finance is fair | 1 | 2 | 3 | 4 | 5 | | | |
| MF2 | Engaging in <i>Murabahah</i> finance will benefit both farmers and bankers. | 1 | 2 | 3 | 4 | 5 | | | |
| MF3 | Engaging in <i>Murabahah</i> finance will provide me with alternatives to the available financial instrument. | 1 | 2 | 3 | 4 | 5 | | | |
| MF4 | Engaging in <i>Murabahah</i> finance will provide me with lower service charges. | 1 | 2 | 3 | 4 | 5 | | | |
| MF5 | <i>Murabahah</i> finance is developed according to the <i>Shariah</i> principle. | 1 | 2 | 3 | 4 | 5 | | | |

Part B

Instruction: Please read and tick as appropriate in the provided boxes your exact assessment of the following demographic information:

1. Gender

Male (1) ☐

Female (2) ☐

Poultry (3)

Fisheries (4)

Forestation (5)

2. Age

18 -29 (1) ☐

30- 39 (2) ☐

40-59 (3) ☐

60 and above (4) ☐

3. Level of Education

Primary (1) ☐

SSCE (2) ☐

ND/NCE (3) ☐

Degree/HND (4) ☐

PGD/Masters (5) ☐

PhD (6) ☐

4. Type of Farming

Farmer (1) ☐

Postural (2) ☐

5. Size of Farming

Large scale farmer (1) ☐

Medium scale farmer (2) ☐

Small scale farmer (3) ☐

6. Number of Employee

1-9 (1) ☐

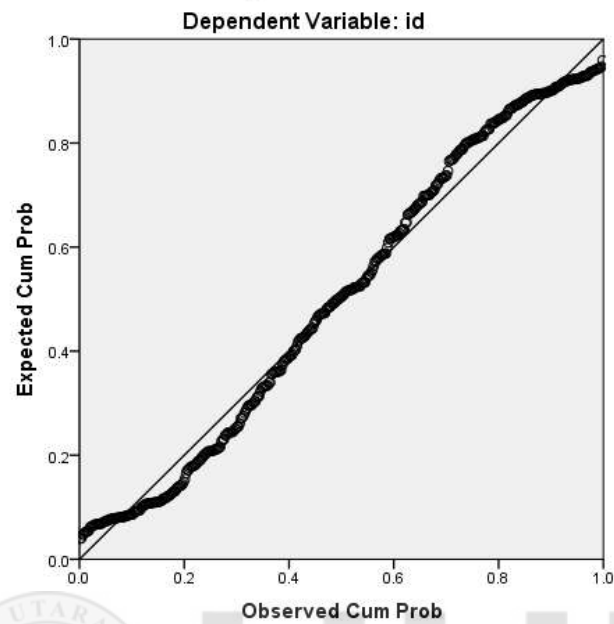
10-49 (2) ☐

50-249 (3) ☐

250 and above (4) ☐

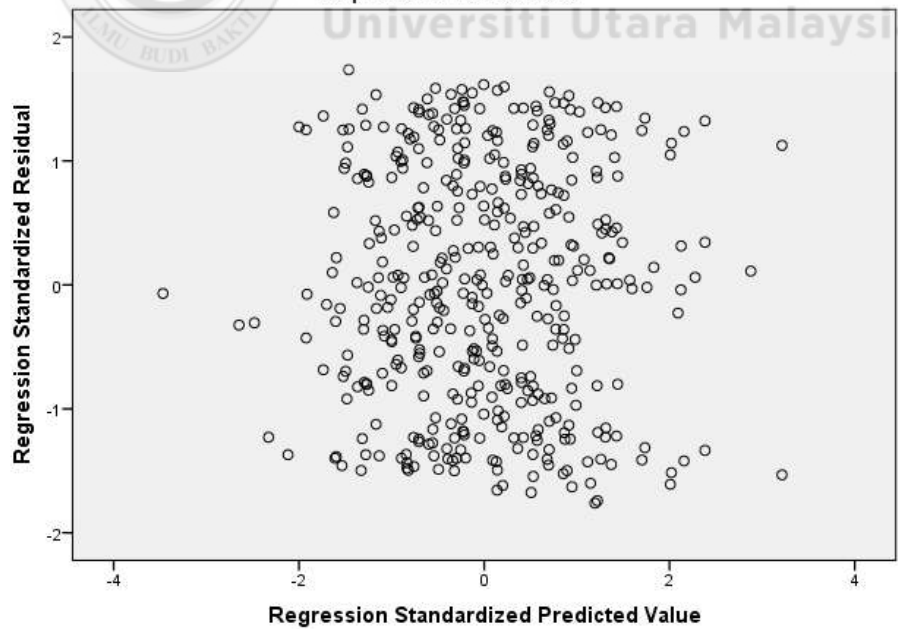
APPENDIX B

Normal P-P Plot of Regression Standardized Residual



Scatterplot

Dependent Variable: id



Descriptive Statistics of Nomality Test

| | N | Skewness | | Kurtosis | |
|---------|-----|-----------|------------|-----------|------------|
| | | Statistic | Std. Error | Statistic | Std. Error |
| AOP1_1 | 430 | -.469 | .118 | -1.040 | .235 |
| AOP2_1 | 430 | -.551 | .118 | -.901 | .235 |
| AOP3_1 | 430 | -.560 | .118 | -1.013 | .235 |
| AOP4_1 | 430 | -.285 | .118 | -1.369 | .235 |
| AOP5_1 | 430 | -.452 | .118 | -1.063 | .235 |
| AOP6_1 | 430 | -.544 | .118 | -.993 | .235 |
| AOP7_1 | 430 | -.588 | .118 | -.807 | .235 |
| AOP8_1 | 430 | -.468 | .118 | -1.111 | .235 |
| AOP9_1 | 430 | -.575 | .118 | -.954 | .235 |
| AOP10_1 | 430 | -.539 | .118 | -.990 | .235 |
| FL1_1 | 430 | -.391 | .118 | -1.191 | .235 |
| FL2_1 | 430 | -.538 | .118 | -.908 | .235 |
| FL3_1 | 430 | -.312 | .118 | -1.276 | .235 |
| FL4_1 | 430 | -.381 | .118 | -1.238 | .235 |
| FL5_1 | 430 | -.392 | .118 | -1.252 | .235 |
| FL6_1 | 430 | -.590 | .118 | -.943 | .235 |
| INF1_1 | 430 | .504 | .118 | -.586 | .235 |
| INF2_1 | 430 | .963 | .118 | 2.286 | .235 |
| INF3_1 | 430 | .710 | .118 | .861 | .235 |
| INF4_1 | 430 | .435 | .118 | -.969 | .235 |
| INF5_1 | 430 | -.053 | .118 | -1.217 | .235 |
| INF6_1 | 430 | .804 | .118 | .544 | .235 |
| INF7_1 | 430 | .823 | .118 | .763 | .235 |
| INF8_1 | 430 | .054 | .118 | -1.358 | .235 |
| MF1_1 | 430 | .517 | .118 | .206 | .235 |
| MF2_1 | 430 | .500 | .118 | .353 | .235 |
| MF3_1 | 430 | .463 | .118 | .303 | .235 |

| | | | | | |
|--------|-----|-------|------|-------|------|
| MF4_1 | 430 | -.051 | .118 | -.341 | .235 |
| MF5_1 | 430 | .157 | .118 | -.535 | .235 |
| FC1_1 | 430 | -.572 | .118 | -.613 | .235 |
| FC2_1 | 430 | -.750 | .118 | .560 | .235 |
| FC3_1 | 430 | -.232 | .118 | -.862 | .235 |
| FC4_1 | 430 | -.590 | .118 | -.308 | .235 |
| FC5_1 | 430 | -.901 | .118 | .028 | .235 |
| FC6_1 | 430 | -.095 | .118 | -.231 | .235 |
| FC7_1 | 430 | -.139 | .118 | -.753 | .235 |
| FC8_1 | 430 | -.426 | .118 | -.530 | .235 |
| FC9_1 | 430 | -.186 | .118 | -.641 | .235 |
| FC10_1 | 430 | -.301 | .118 | -.604 | .235 |

Results of Common Method Variance

| Component | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | |
|-----------|---------------------|-----------------|---------|-------------------------------------|----------|--------------|
| | Total | % of Cumulative | | Total | % of | |
| | | Variance | % | | Variance | Cumulative % |
| 1 | 7.709 | 19.766 | 19.766 | 7.709 | 19.766 | 19.766 |
| 2 | 7.160 | 18.360 | 38.126 | | | |
| 3 | 2.474 | 6.344 | 44.470 | | | |
| .. | .. | .. | .. | | | |
| .. | .. | .. | .. | | | |
| .. | .. | .. | .. | | | |
| 37 | .155 | .396 | 99.341 | | | |
| 38 | .143 | .367 | 99.709 | | | |
| 39 | .114 | .291 | 100.000 | | | |

Extraction Method: Principal Component Analysis.

Number of Detected and Replaced Missing Values

| Result Variable | Number of Replaced Missing Values |
|-----------------|-----------------------------------|
| AOP1_1 | 2 |
| AOP2_1 | 3 |
| AOP3_1 | 1 |
| AOP4_1 | 1 |
| AOP5_1 | 2 |
| AOP6_1 | 2 |
| AOP7_1 | 2 |
| AOP8_1 | 1 |
| AOP9_1 | 2 |
| AOP10_1 | 1 |
| FL1_1 | 1 |
| FL2_1 | 1 |
| FL3_1 | 1 |
| FL4_1 | 1 |
| FL5_1 | 1 |
| FL6_1 | 1 |
| INF1_1 | 1 |
| INF2_1 | 1 |
| INF3_1 | 3 |
| INF4_1 | 4 |
| INF5_1 | 2 |
| INF6_1 | 2 |
| INF7_1 | 1 |
| INF8_1 | 2 |
| MF1_1 | 1 |
| MF2_1 | 1 |
| MF3_1 | 1 |

| | |
|-------------------------------------|-------------------------------------|
| MF4_1 | 1 |
| MF5_1 | 2 |
| FC1_1 | 2 |
| FC2_1 | 1 |
| FC3_1 | 2 |
| FC4_1 | 1 |
| FC5_1 | 2 |
| FC6_1 | 1 |
| FC7_1 | 2 |
| FC8_1 | 2 |
| FC9_1 | 1 |
| FC10_1 | 2 |
| Gender_1 | 1 |
| Age_1 | 3 |
| Education_1 | 3 |
| FarmType_1 | 1 |
| Employees_1 | 2 |
| Grand total | 71 out of 20,115 data points |
| Percentage of missing values | 0.35% |

Note: Percentage of missing values is obtained by dividing the total number of randomly missing values for the entire data set by total number of data points multiplied by 100.

Cross Loading

| | AO | FC | FL | INF | MF |
|---------|-------|-------|-------|-------|----|
| AOP10_1 | 0.815 | | | | |
| AOP1_1 | 0.671 | | | | |
| AOP2_1 | 0.754 | | | | |
| AOP3_1 | 0.623 | | | | |
| AOP4_1 | 0.711 | | | | |
| AOP5_1 | 0.654 | | | | |
| AOP6_1 | 0.803 | | | | |
| AOP7_1 | 0.700 | | | | |
| AOP8_1 | 0.768 | | | | |
| AOP9_1 | 0.792 | | | | |
| FC10_1 | | 0.795 | | | |
| FC2_1 | | 0.561 | | | |
| FC3_1 | | 0.520 | | | |
| FC4_1 | | 0.681 | | | |
| FC5_1 | | 0.589 | | | |
| FC6_1 | | 0.822 | | | |
| FC7_1 | | 0.826 | | | |
| FC8_1 | | 0.795 | | | |
| FC9_1 | | 0.842 | | | |
| FL2_1 | | | 0.621 | | |
| FL3_1 | | | 0.656 | | |
| FL4_1 | | | 0.777 | | |
| FL5_1 | | | 0.763 | | |
| FL6_1 | | | 0.758 | | |
| INF2_1 | | | | 0.870 | |
| INF3_1 | | | | 0.854 | |
| INF6_1 | | | | 0.736 | |

| | | | | | |
|--------|--|--|--|-------|-------|
| INF7_1 | | | | 0.774 | |
| MF1_1 | | | | | 0.907 |
| MF2_1 | | | | | 0.879 |
| MF3_1 | | | | | 0.920 |

Path Coefficient

| | AO | FC | FL | INF | MF |
|-----|-------|----|----|-----|----|
| AO | | | | | |
| FC | 0.137 | | | | |
| FL | 0.468 | | | | |
| INF | 0.188 | | | | |
| MF | 0.128 | | | | |

Inner VIF Values

| | AO | FC | FL | INF | MF |
|-----|-------|----|----|-----|----|
| AO | | | | | |
| FC | 1.104 | | | | |
| FL | 1.080 | | | | |
| INF | 1.233 | | | | |
| MF | 1.292 | | | | |

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Date July 14, 2016

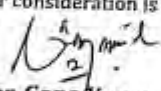
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GRADUATE SCHOOL OF BUSINESS
Universiti Utara Malaysia
06010 UUM SINTOK
KEDAH DARULAMAN
MALAYSIA

POPULATION SAMPLE OF KANO STATE FARMERS

I hereby present the attached list of population sample of registered Kano State farmers for the purpose of PhD. Research work in respect of AHMED IBRAHIM MOHAMMED (Matrix No. 96190), who is undergoing a field survey entitled Relationship between farm credit, farmland, farm infrastructure and agricultural output in Kano State Nigeria; The moderating effect of Murabahah finance.

The selected 760 farmers were from the 511870 registered with Federal Ministry of Agriculture and Rural Development's Growth Enhancement Support (Scheme) Program.

Your consideration is much appreciated.


Abba Gana Yamani

Assistant Director (GES)
Federal Ministry of Agriculture and Rural Development
Kano State